Use Attainability Analysis

for

WBID 273 Bee Creek

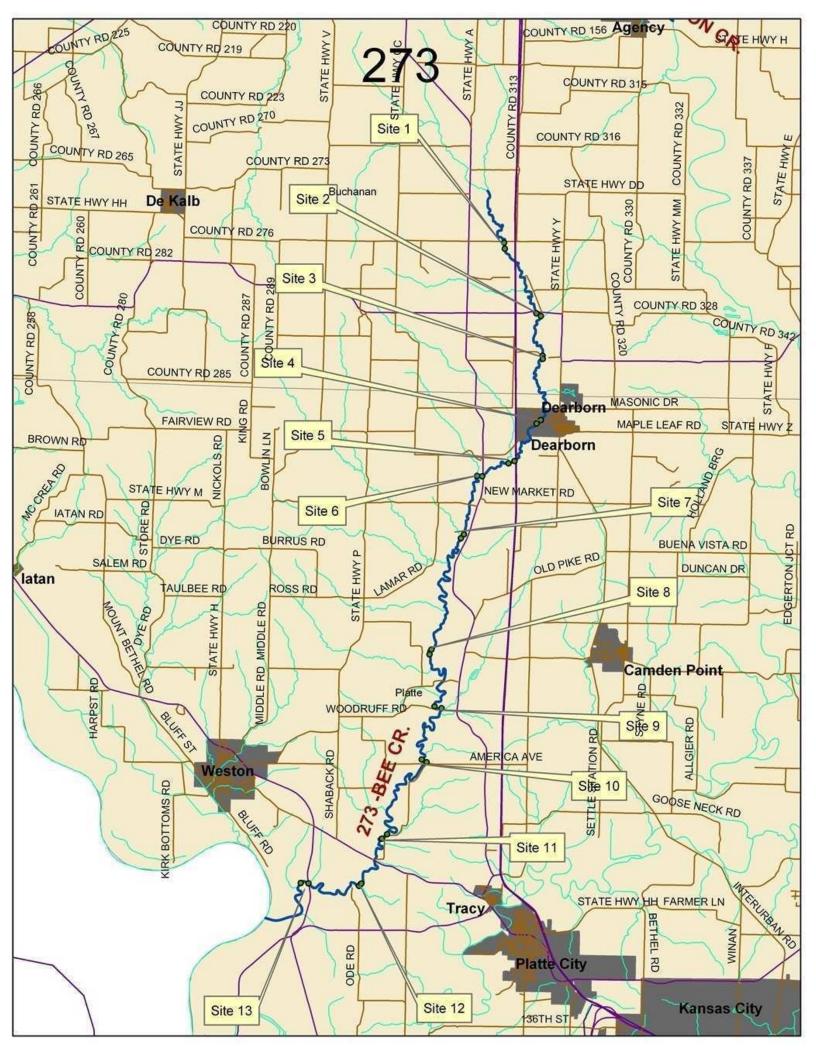
Submitted by SES Inc.

November 14, 2007

Submitted to:
Missouri Department of Natural Resources
Division of Environmental Quality
Water Protection Program

Data Sheet A - Water Body Identification

	ody Informati		water body beir	ig surveyed)	
Water Boo	dy Name (from	USGS 7.5' quad	d): Bee Cr.			
Missouri V	Vater Body Ide	ntification (WBIE	O) Number:	273		
8 digit HU	C code: 1	0240011		County:	Buchanar	١
Upstream	Legal Descript	ion (from Table	H):	T55N R3	5W SEC 11	
Downstrea	am Legal Desc	ription (from Tab	ole H):	T53N R3	5W SEC 30	
Number of	f sites evaluate	d:	13			
List all site	numbers, liste	ed consequently	upstream to do	ownstream:		
1, 2, 3, 4,	5, 6, 7, 8, 9, 10	, 11, 12, 13				
Site Loca	tions Map(s):	Attach a map of	the entire sea	ment with as	ssessment	sites clearly labeled.
		t may be of inter	_			
•		•				
II Faailita		link all mannaithe d				.40
		list all permitted mit Number(s):	discharges to	ine water bo	oay segmen	11)
l acility ive	arric(s) aria r ci	mit Number(3).				
	Whispering P	ines MHP				
	MO0118991					
	WCC110001					
III. UAA S	urveyor (pleas	e print legibly)				
Name of S		ilisa Gould		Telephon	e Number:	913.307.0054
Organizati	ion/Employer:	SES, I	Inc			
Please ve	rify that you h	ave completed	l all sections,	checked al	l applicable	e boxes, and that the form is
complete		•	•			•
Signed:	Gilisa Gould			Date:	11.08.07	
Jigileu.	Jilisa Goulu			_ Date.	11.00.07	



WBID#	273
Site #	1

Date & Time:	10.9.0	7 1:30pm		Site Location	Site Location Description (e.g. road crossing):				
Personnel:	L. Brow	n and G. Gould		Taos Rd cr	ossing				
Current Weat	her Cond	ditions: clear		Facility Nar	me:	whispering pi	ne s MHP		
Weather cond	litions fo	r the past 10 days:0	0.96 inches	Permit Nun	nber:	MO0118991			
Drought cond	itions?: N	No drought ☑ ; Pha	se I □ ; Phase	· II □ ; Phas	e III □ ; Pl	nase IV 🗆 ; Ur	nknown 🗆		
Site Location									
Location Coor	dinates	(Universal Transver	se Mercator Pr	rojection, In	Mete rs				
Site 01	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:		
	034599	9	4382413				15 ft		
Site 11	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:		
	034602	9	4382215				20 ft		
Photos:			1	1		1	Г		
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	ourpose	Photo ID#:	Photo Purpose		
18	downst	ream, T1	19	upstream, ⁻	T1	20	downstream, T11		
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
21	upstrea	m, T11							
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
Uses Observ	ed:								
☐ Swimming)	☐ Skin diving	□ SCUBA d	iving	☐ Tubin	9	☐ Water Skiing		
☐ Wind surfi	ng	☐ Kayaking	□ Boating		□ Wadir	ıg	□ Rafting		
☐ Hunting		☐ Trapping	□ Fishing		☑ None	of the above	□ Other:		
Describe:									

WBID#	273
Site #	1

	Data Sheet B-	Site Characterizat	ion (Conti	nued)		
Surrounding Conditi	ons:					
☐ City/County parks	☐ playgrounds	☐ MDC conserva	tion lands	☐ Urban areas	s 🛮 Rura	al Residential
☐ Campgrounds	☐ State parks	□ National Fores	ts	□ Nature trails	☐ Staiı	rs/walkways
□ Boating accesses	☐ Fence	☐ No tresspass s	sign	☐ Steep Slope	s □ Oth	er:
Comments:	none					
Evidence of Human l						
□ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sit		e swings
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discha	rge	☐ Fishing Tack	de ∐ Live	stock watering
comments/other:						
None						
Substrate:						
% Cobble	% Gravel	% Sand	% Silt	% Mı	ud/Clay	% Bedrock
	10	20	70			
Aquatic Vegatation:						
none						
Water Characteristics						
Odor:	☐ Sewage	☐ Musky	☐ Chem		☑ None	☐ Other:
Color:	☐ Clear	□Green	☐ Gray		☑ Milky	☑ Other:
Detters Desire!t	□ Cludge	□ Colide	П Г:	a dim anta	D None	Brown
Bottom Deposit: Surface Deposit:	☐ Sludge ☐ Oil	☐ Solids ☐ Scum	☐ Fine s		☑ None ☑None	☐ Other: ☐ Other:
Surface Deposit.		□ Ocum	⊔ i ∪alli		FINOIR	□ Ollici.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology:	(Record isolated pools or other features id	dentified during the survey that may support recreational uses)
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Channel Feature	Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (m)				
· · · · · · · · · · · · · · · · · · ·					
omments: (Please re	cord any additional comments I	nere.)			
	ou have completed all s	ections, checke	ed all applicable	boxes, and that the f	form is
ease verity that yo	•	•	• •	,	
mplete.					
mplete.	gilisa gould		Date of Survey:	10.09.07	
mplete.	gilisa gould		_Date of Survey:	10.09.07	
mplete.	gilisa gould		_Date of Survey:	10.09.07	
ease verify that your properties of the complete. Irveyor's Signature: Organization:				10.09.07 field team leader	

																		Disso	lved Ox	ygen		
	Waterbo	ody ID:	273		,	Site #:	1									Date:	10/9/07			Time:	1:30pm	
	Estimat	ed Chanr	nel Incisio	on:	3.0	(m) (hei	ght betw	een low b	ank widt	th and wa	ater)						ssolved (Oxygen:			(mg/L)	
			•			•		izontal Ac	•		(EPE / P	DOP / FO										
		UTM X UTM X		0345999			UTM Y: UTM Y:		4382413		Ī	+/-	4.6 6.1	(meters)	•	Di	ssolved (Oxygen:			(% sat)	
											•		Specifi	c Cond:			(µS/cm)					
	_		Width: ngth of F	Reach)	6.0			(meters)		ength of 20x avera	-	_			(meters)	Wa	ter Temp	erature:	23.7		(°C)	
	г.	110,00					D	1.671	G 11									•				
	Fie	id Staff:				Larissa	Brown a	nd Gilisa (Jould					-								
			ı				ı			Tra	nsect C	ross-Se	ction		I							
)1		2		3)4)5		6		07	08	3	09	9	1	0	1	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.4	0.01	0.3	0.01	0.3	0.01	0.6	0.05	0.3	0.10	0.5	0.25	0.7	0.01	0.6	0.15	0.4	0.01	0.5	0.05	0.4	0.01
2	0.8	0.05	0.6	0.01	0.6	0.05	1.2	0.05	0.6	0.20	1.0	0.65	1.4	0.10	1.2	0.25	0.8	0.05	1.0	0.10	0.8	0.05
3	1.2	0.10	0.9	0.05	0.9	0.05	1.8	0.05	0.9	0.20	1.5	0.90	2.1	0.25	1.8	0.15	1.2	0.05	1.5	0.15	1.2	0.15
4	1.6	0.10	1.2	0.10	1.2	0.10	2.4	0.05	1.2	0.15	2.0	0.95	2.8	0.20	2.4	0.10	1.6	0.01	2.0	0.20	1.6	0.20
5	2.0	0.10	1.5	0.10	1.5	0.10	3.0	0.10	1.5	0.20	2.5	0.80	3.5	0.10	3.0	0.10	2.0	0.10	2.5	0.25	2.0	0.25
(2.4	0.05	1.8	0.10	1.8	0.10	3.6	0.10	1.8	0.20	3.0	0.60	4.2	0.15	3.6	0.05	2.4	0.10	3.0	0.30	2.4	0.20
7	2.8	0.05	2.1	0.10	2.1	0.10	4.2	0.10	2.1	0.20	3.5	0.55	4.9	0.10	4.2	0.10	2.8	0.15	3.5	0.25	2.8	0.15
8	3.2	0.01	2.4	0.05	2.4	0.05	4.8	0.05	2.4	0.05	4.0	0.30	5.6	0.05	4.8	0.10	3.2	0.15	4.0	0.15	3.2	0.10
ģ	3.6	0.01	2.7	0.10	2.7	0.01	5.4	0.01	2.7	0.05	4.5	0.25	6.3	0.05	5.4	0.10	3.6	0.15	4.5	0.05	3.6	0.01
ight Bank	4.0	0.00	3.0	0.00	3.0	0.00	6.0	0.00	3.0	0.00	5.0	0.00	7.0	0.00	6.0	0.00	4.0	0.00	5.0	0.00	4.0	0.00
eature Type		201				200		og.									. ~	~				
ffle, run, or pool riffle		rıf	fle	rıf	fle	r11	ffle	rı	ın	pc	ool	p	ool	po	ol	rif	ie	po	ol	po	01	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.09.07	
-------------------------------------	--

WBID#	273
Site #	2

Date & Time:	10.9.07	2:35		Site Location Description (e.g. road crossing):				
Personnel:	Larissa	Brown and Gilisa G	Gould	116 Hwy R	d crossing			
Current Weat	her Cond	ditions: clear		Facility Nar	me:	whispering pi	ne s MHP	
Weather cond	litions fo	r the past 10 days:0	0.96 inches	Permit Nun	nber:	MO0118991		
Drought cond	itions?: N	No drought ☑ ; Pha	se I □ ; Phase	e II □ ; Phas	e III □ ; Pl	hase IV 🛚 ; Uı	nknown 🗆	
Site Location								
Location Coor	dinates	(Universal Transver	se Mercator Pi	rojection, In	Meters			
Site 01	Easting	(UTM X):	Northing (UTI	M Y):		Horizontal Ac	curacy:	
		0347097		4380031			21 ft	
Site 11	Easting	(UTM X):	Northing (UTI	M Y):		Horizontal Ac	curacy:	
		0347237	4379934				35 ft	
Photos:								
Photo ID#	F	Photo Purpose	Photo ID#: Photo Purpose			Photo ID#:	Photo Purpose	
22		upstream	23	downstrear	n	24	downstream	
Photo ID#	F	Photo Purpose	Photo ID#	Photo Purpose		Photo ID#	Photo Purpose	
25		upstream						
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose	
		•			•		·	
			1	•				
Uses Observ	ed:							
☐ Swimming	l	☐ Skin diving	□ SCUBA d	iving	☐ Tubin	g	☐ Water Skiing	
☐ Wind surfi	ng	☐ Kayaking	□ Boating		□ Wadir	ng	□ Rafting	
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:	
Describe:					-			

WBID#	273
Site #	2

Data Sheet B- Site Characterization (Continued)												
Surrounding Conditi	ione:											
☐ City/County parks	□ playgrounds	☐ MDC conservation	n lands	☐ Urban areas	I □ Rui	al Residential						
☐ Campgrounds	☐ State parks	☐ National Forests	i idiido	☐ Nature trails		irs/walkways						
☐ Boating accesses	☐ Fence	☐ No tresspass sign	1	☐ Steep Slopes		her:						
Comments:	L I CITOC	140 tresspass sign	<u> </u>	- Otoop Glopes	, 10 00	1101.						
none												
110110												
Evidence of Human	Use:											
☐ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Site	es 🗆 Roi	oe swings						
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge)	☐ Fishing Tack		estock watering						
comments/other:	, ,				<u>.</u>	<u> </u>						
none												
none												
Substrate:												
% Cobble	% Gravel		% Silt	% Mu	d/Clay	% Bedrock						
	10	20	70									
Aquatic Vegatation:												
none												
Water Characteristic												
Odor:	☐ Sewage	,	⊐ Chemi		☑ None	☐ Other:						
Color:	☐ Clear	□Green [⊐ Gray	[□ Milky	☑ Other:						
						Brown						
Bottom Deposit:	□ Sludge				☑ None	☐ Other:						
Surface Deposit:	□ Oil	☐ Scum [⊒ Foam	[☑None	□ Other:						

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream	m Morpholo	av: (Record isolated	pools or other featu	ires identified during	the survey that may	support recreational uses)
Additional otici		GY (INCCOID ISOIAICE	pools of other realt	ii 63 laci lillica aalii la	tile sulvey that may	Support recicational uses,

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (III)				
Commonto (D)		,			
Comments: (Please re	cord any additional comments h	nere.)			
	none				
Diagon verify that we	ou bava completed all co	aatiama ahaals	d all annliachta	haves and that the f	io umo lo
complete.	ou have completed all so	ections, cnecke	eu an applicable	boxes, and that the I	OIIII IS
-					
Surveyor's Signature:	gilisa gould		_Date of Survey:	10.23.07	
			_		
Organization:	SES, Inc.		Position:	field team leader	

																		Disso	lved Ox	ygen			
	Waterbo	ody ID:	273			Site #:	2									Date:	10.19.07	7		Time:	2:35		
	Estimate	ed Chann	nel Incisi	on:	3.0	(m) (hei	ight betw	nt between low bank width and water)									Dissolved Oxygen			8	(mg/L)		
		cation - I UTM X	•	UTM X) 0347047		-	Y), Hor UTM Y:	izontal Ac	curacy I 438003		•		OM) 6.4	(meters)				•			(% sat)		
	11 UTM X: 0347237 UTM Y:												Dissolved Oxygen: Specific Cond:					•					
	Average Stream Width: 6 (meters) Length of Survey Segment: 150 (meter										(meters)	33 7 -		•									
	(To determne Length of Reach) (20x average stream width)													wa	ter 1 emp	berature:		20.5	(30)				
	Field Staff: Larissa Brown and Gilisa Gould																						
	Transect Cross-Section																						
	01 02)5		6		07	0	8		9	10	0	11	1					
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.5	0.10	0.6	0.05	0.4	0.01	0.6	0.05	0.3	0.01	0.5	0.05	0.2	0.10	0.4	0.15	0.3	0.15	0.5	0.10	0.3	0.05	
2	1.0	0.15	1.2	0.30	0.8	0.05	1.2	0.20	0.6	0.05	1.0	0.10	0.4	0.25	0.8	0.25	0.6	0.30	1.0	0.30	0.6	0.25	
3	1.5	0.15	1.8	0.25	1.2	0.05	1.8	0.35	0.9	0.10	1.5	0.10	0.6	0.25	1.2	0.30	0.9	0.40	1.5	0.65	0.9	0.50	
4	2.0	0.05	2.4	0.15	1.6	0.01	2.4	0.30	1.2	0.15	2.0	0.10	0.8	0.20	1.6	0.25	1.2	0.50	2.0	0.65	1.2	0.50	
5	2.5	0.05	3.0	0.10	2.0	0.05	3.0	0.30	1.5	0.20	2.5	0.05	1.0	0.15	2.0	0.30	1.5	0.40	2.5	0.65	1.5	0.50	
6	3.0	0.05	3.6	0.05	2.4	0.15	3.6	0.25	1.8	0.20	3.0	0.05	1.2	0.15	2.4	0.25	1.8	0.20	3.0	0.60	1.8	0.45	
7	3.5	0.05	4.2	0.15	2.8	0.15	4.2	0.20	2.1	0.15	3.5	0.05	1.4	0.10	2.8	0.20	2.1	0.25	3.5	0.55	2.1	0.40	
8	4.0	0.05	4.8	0.10	3.2	0.05	4.8	0.05	2.4	0.10	4.0	0.10	1.6	0.05	3.2	0.10	2.4	0.20	4.0	0.20	2.4	0.15	
9	4.5	0.01	5.4	0.01	3.6	0.01	5.4	0.01	2.7	0.05	4.5	0.10	1.8	0.05	3.6	0.05	2.7	0.05	4.5	0.05	2.7	0.05	
aight Bank	5.0	0.00	6.0	0.00	4.0	0.00	6.0	0.00	3.0	0.00	5.0	0.00	2.0	0.00	4.0	0.00	3.0	0.00	5.0	0.00	3.0	0.00	
eature Type	" :€	Ho.		vo1	rif	Ŧlo.		ffle	***	110	400	110		un.	**	ol.		ol.	,	ol.	***	o1	
ime, run, or pool	e, run, or pool riffle		рc	ool	111	110	11.	1110	10	un	10	ın	ı	un	po	UI	po	101	po	UI	po	UI	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.09.07	
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WBID#	273
Site #	3

Date & Time:	10.10.0	9:30am		Site Location	Site Location Description (e.g. road crossing):						
Personnel:	Larissa	Brown and Gilisa G	ould	south of 116 rd crossing							
Current Weat	ner Cond	ditions: clear		Facility Nar	Facility Name: whispering pines MHP						
Weather cond	litions fo	r the past 10 days:0	.96 inches	Permit Num	nber:	MO0118991					
Drought cond	tions?: N	No drought ☑ ; Pha	se I □ ; Phase	· II □ ; Phas	e <mark>III □ ; P</mark> ł	nase IV □ ; Ur	nknown 🗆				
Site Location	1:										
		(Universal Transver	se Mercator Pr	ojection, In	Meters						
Site 01	Easting	ı (UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:				
		0347373		4378605			14 ft				
Site 11	Easting	ı (UTM X):	Northing (UTN	M Y):		Horizontal Ac	curacy:				
		0347309		4378495		23 ft					
		0041 000		10.000							
Photos:	1		<u> </u>	т		T	ı				
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose				
38		upstream	39	downstrear	n	40	downstream				
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose Photo ID#		Photo Purpose				
41		upstream									
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose				
Uses Observ	ed:										
☐ Swimming	J	☐ Skin diving	☐ SCUBA di	iving	☐ Tubino	9	□ Water Skiing				
☐ Wind surfi	ng	☐ Kayaking	□ Boating		□ Wadin	g	□ Rafting				
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:				
Describe:			<u>.t </u>		<u>.</u>						

WBID#	273
Site #	3

Data Sneet B- Site Characterization (Continued)												
Surrounding Conditi	ons:											
☐ City/County parks	☐ playgrounds	☐ MDC conservation	on lands	☐ Urban area	as □ Ru	ıral Residential						
☐ Campgrounds	☐ State parks	□ National Forests		□ Nature trail	ls □ Sta	airs/walkways						
☐ Boating accesses	☑ Fence	☐ No tresspass sig	n I	☐ Steep Slop		•						
Comments:	4											
corn field												
Evidence of Human I		1-5										
☐ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping S		pe swings						
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharg	e I	☐ Fishing Tad	ckle ⊔ Liv	estock watering						
comments/other:												
none												
Substrate:												
% Cobble	% Gravel	% Sand	% Silt	% N	/lud/Clay	% Bedrock						
	, ,	90			10							
Aquatic Vegatation:												
none												
Water Characteristics	-					= 0.1						
Odor:	☐ Sewage	☐ Musky	☐ Chemic	cal	☑ None	☐ Other:						
Color:	☐ Clear	☑Green	☐ Gray		☐ Milky	☐ Other:						
D. (1) D		T 0-1:1-		V	□ None							
Bottom Deposit:	☐ Sludge ☐ Oil	☐ Solids ☐ Scum	☐ Fine se	diments	✓ None ✓None	☐ Other: ☐ Other:						
Surface Deposit:	□ Oii	□ Scuiii	□ Foam		MINOUE	⊔ Other.						

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses
--

Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
access recation (m)				
cord any additional comments	here.)			
none				
ou have completed all s	ections, checke	ed all applicable	boxes, and that the f	orm is
	access location (m)	cord any additional comments here.)	access location (m)	access location (m)

Position: field team leader

																		Disso	lved Ox	ygen				
		ody ID:														Date:	10.10.07			Time:	9:30			
								een low b								Di	ssolved (Oxygen:		16.4	(mg/L)			
	01	UTM X	:	0347373	3	1	UTM Y:		437860	5	`	+/-	6.4	(meters)		Di	issolved (Oxygen:	:(% sat)					
		UTM X		0347309							•	+/-	10.7	(meters)		Specific Cond:(µS/cm)								
	Average Stream Width: 5 (meters) Length of Survey Segment: 100 (meters) (To determine Length of Reach) (20x average stream width)											(meters)	Wa	ter Temp	erature:		16.7	(°C)						
	Field Staff: Larissa Brown and Gilisa Gould																							
	Transect Cross-Section																							
	01 02 03 04)4	0)5	0	16		07	08	3	0:	9	1	0	11	1				
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m		
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1	0.5	0.50	0.5	0.20	0.5	0.30	0.5	0.20	0.5	0.10	0.5	0.20	0.5	0.25	0.5	0.10	0.5	0.35	0.5	0.35	0.5	0.10		
2	1.0	0.60	1.0	0.35	1.0	0.50	1.0	0.50	1.0	0.25	1.0	0.35	1.0	0.35	1.0	0.40	1.0	0.30	1.0	0.30	1.0	0.30		
3	1.5	0.70	1.5	0.60	1.5	0.55	1.5	0.50	1.5	0.55	1.5	0.45	1.5	0.35	1.5	0.50	1.5	0.30	1.5	0.30	1.5	0.55		
4	2.0	0.70	2.0	0.75	2.0	0.55	2.0	0.50	2.0	0.70	2.0	0.45	2.0	0.40	2.0	0.50	2.0	0.25	2.0	0.25	2.0	0.65		
5	2.5	0.60	2.5	0.75	2.5	0.60	2.5	0.50	2.5	0.75	2.5	0.40	2.5	0.35	2.5	0.45	2.5	0.15	2.5	0.15	2.5	0.60		
•	3.0	0.50	3.0	0.80	3.0	0.60	3.0	0.45	3.0	0.65	3.0	0.40	3.0	0.30	3.0	0.45	3.0	0.15	3.0	0.35	3.0	0.35		
7	3.5	0.55	3.5	0.75	3.5	0.60	3.5	0.40	3.5	0.50	3.5	0.40	3.5	0.30	3.5	0.40	3.5	0.10	3.5	0.15	3.5	0.30		
8	4.0	0.50	4.0	0.40	4.0	0.40	4.0	0.20	4.0	0.40	4.0	0.30	4.0	0.30	4.0	0.35	4.0	0.15	4.0	0.15	4.0	0.20		
9	4.5	0.50	4.5	0.20	4.5	0.20	4.5	0.05	4.5	0.30	4.5	0.20	4.5	0.20	4.5	0.20	4.5	0.15	4.5	0.10	4.5	0.20		
ight Bank	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00		
eature Type																								
ffle, run, or poo	run, or pool pool		pc	ool	pc	ool	po	ool	po	ool	pc	ool	p	ool	po	ol	po	ol	pool poo		ol			

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.01.07	
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WBID#	273
Site #	4

Date & Time:	10.9.07	3:15pm		Site Location	Site Location Description (e.g. road crossing):				
Personnel:	Larissa	Brown and Gilisa G	ould	Hwy Z					
Current Weath	ner Conc	ditions: clear		Facility Nan	ne:	whispering pi	nes MHP		
Weather cond	itions for	r the past 10 days:0	.96 inches	Permit Num	nber:	MO0118991			
Drought condi	tions?: N	No drought ☑ ; Phas	se I □ ; Phase	II □ ; Phase	e <mark>III □ ; P</mark> ł	na <mark>se IV □ ; U</mark> r	nknown 🗆		
Site Location									
Location Coordinates (Universal Transverse Mercator Projection, In Meters									
Site 01	Easting	(UTM X):	Northing (UTN	Л Y):		Horizontal Ac	curacy:		
		0347251		4376435			16 ft		
Site 11	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:		
		0347104		4376314 20 ft					
	<u> </u>		1						
Photos:	Г		T	Ī		l	Γ		
Photo ID#	F	Photo Purpose	Photo ID#:	Photo Purpose		Photo ID#:	Photo Purpose		
26	downst	ream, T1	27	upstream, T1		28	downstream, T11		
	_	_		5					
Photo ID#	P	Photo Purpose	Photo ID#	Photo Purpose		Photo ID#	Photo Purpose		
29		upstream, T11							
Dhata ID#	_	Photo Purpose	Dhata ID#	Photo F	2::======	Dhata ID#	Dhota Durnaga		
Photo ID#		noto Purpose	Photo ID#	PHOTO L	Purpose	Photo ID#	Photo Purpose		
			<u> </u>						
Uses Observ	ed:	г	T		ı		Т		
☐ Swimming		☐ Skin diving	☐ SCUBA di	iving	☐ Tubing	g	☐ Water Skiing		
☐ Wind surfi	ng	□ Kayaking	☐ Boating		☐ Wadin	ng	☐ Rafting		
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	None of the above			
Describe:									

WBID#	273
Site #	4

		Site Characterization (Cont	inuea)	
Surrounding Conditi	ione:			
☐ City/County parks	□ playgrounds	☐ MDC conservation lands	□ Urban areas	☑ Rural Residential
☐ Campgrounds	☐ State parks	☐ National Forests	☐ Nature trails	☐ Stairs/walkways
☐ Boating accesses	☐ Fence	☐ No tresspass sign	☐ Steep Slopes	☐ Other:
Comments:	1 = 1 01.00			
none				
Evidence of Human	Use:			
☐ Roads	☐ Foot path/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock watering
comments/other:				
none				
-				
Cultinaturates	_			
Substrate:	0/ 0	0/ 01	0/ Mind/	O/ Dodgook
Substrate: % Cobble	% Gravel	% Sand % Silt	% Mud/(
	% Gravel	% Sand % Silt 25 25	% Mud/0 50	
% Cobble	% Gravel			
	% Gravel			
% Cobble Aquatic Vegatation:	% Gravel			
% Cobble	% Gravel			
% Cobble Aquatic Vegatation:	% Gravel			
% Cobble Aquatic Vegatation:	% Gravel			
% Cobble Aquatic Vegatation: none				
% Cobble Aquatic Vegatation: none Water Characteristics	s:	25 25	50	
% Cobble Aquatic Vegatation: none Water Characteristic: Odor:	:s: □ Sewage	25 25 ☐ Musky ☐ Chel	50 mical ☑ 1	None ☐ Other:
% Cobble Aquatic Vegatation: none Water Characteristics	s:	25 25	50 mical ☑ 1	None □ Other: Milky ☑ Other:
% Cobble Aquatic Vegatation: none Water Characteristic: Odor:	:s: □ Sewage	25 25 ☐ Musky ☐ Chel ☐ Green ☐ Gray	mical ☑↑	None ☐ Other:

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream	n Morphology:	(Record isolated pools	or other features identifie	ed during the survey	that may support recreational uses)

Channel Feature	Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (m)				
			_		
Comments: (Please re	cord any additional comments h	nere.)			
	none				
Please verify that yo complete.	ou have completed all s	ections, checke	ed all applicable	boxes, and that the f	orm is
Surveyor's Signature:	gilisa gould		_Date of Survey:	10.09.07	
Organization:	SES, Inc.		Position:	field team leader	

																		Disso	lved Ox	ygen		
			273													Date:	10.9.07			Time:	3:15pm	
						•		een low b				DOD / E	21.0			Di	ssolved	Oxygen:		6.9	(mg/L)	
	01	UTM X	:	0347251 0347104	1		UTM Y:		437643	5	•	+/- +/-	ЭМ) 4.9 6.1	(meters)		Di	ssolved (Oxygen:			(% sat)	
	11 UTM X: 0347104 UTM Y: 4376314 +/- 6.1 (meters) Specific Cond: (μS/cm) Average Stream Width: 6 (meters) Length of Survey Segment: 150 (meters)																					
			ngth of F				-	(20x avera	-	_			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Wa	ter Temp	erature:		27.7	(°C)	
	Field Staff: Larissa Brown and Gilisa Gould																					
										Tra	nsect C	ross-Se	ction									
	0	1	0	2	0	13		04	0)5	0)6	(07	08	8	0	9	10	0	11	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.01	0.5	0.01	0.6	0.05	0.5	0.05	0.6	0.15	0.7	0.15	0.6	0.05	0.4	0.01	0.3	0.05	0.3	0.10	0.3	0.01
2	1.0	0.05	1.0	0.05	1.2	0.10	1.0	0.40	1.2	0.50	1.4	0.45	1.2	0.10	0.8	0.05	0.6	0.45	0.6	0.20	0.6	0.25
3	1.5	0.10	1.5	0.10	1.8	0.25	1.5	0.35	1.8	0.70	2.1	0.40	1.8	0.30	1.2	0.20	0.9	0.50	0.9	0.25	0.9	0.35
4	2.0	0.15	2.0	0.20	2.4	0.50	2.0	0.35	2.4	0.60	2.8	0.40	2.4	0.30	1.6	0.25	1.2	0.75	1.2	0.40	1.2	0.50
5	2.5	0.15	2.5	0.25	3.0	0.65	2.5	0.25	3.0	0.60	3.5	0.35	3.0	0.30	2.0	0.20	1.5	0.80	1.5	0.30	1.5	0.55
6	3.0	0.25	3.0	0.15	3.6	0.70	3.0	0.25	3.6	0.65	4.2	0.45	3.6	0.20	2.4	0.15	1.8	0.75	1.8	0.40	1.8	0.55
7	3.5	0.30	3.5	0.10	4.2	0.50	3.5	0.30	4.2	0.55	4.9	0.30	4.2	0.15	2.8	0.10	2.1	0.70	2.1	0.40	2.1	0.50
8	4.0	0.25	4.0	0.10	4.8	0.30	4.0	0.30	4.8	0.30	5.6	0.15	4.8	0.10	3.2	0.05	2.4	0.45	2.4	0.40	2.4	0.40
9	4.5	0.15	4.5	0.05	5.4	0.10	4.5	0.25	5.4	0.05	6.3	0.05	5.4	0.05	3.6	0.05	2.7	0.10	2.7	0.35	2.7	0.30
ight Bank	5.0	0.00	5.0	0.00	6.0	0.00	5.0	0.00	6.0	0.00	7.0	0.00	6.0	0.00	4.0	0.00	3.0	0.00	3.0	0.00	3.0	0.00
eature Type	**	1	: 6	fle		vo1		201	بمو	201		201		001		ol.		ol.		ol.		o1
ffle, run, or pool	pc	ol	III	110	pc	ool	L p	ool	pc	ool	pc	ool	р	ool	po	UI	po	101	po	UI	po	UI

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.09.07	
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WBID#	273
Site #	5

Date & Time:	10.9.07	4:10pm		Site Location	Site Location Description (e.g. road crossing):					
Personnel:	Larissa	Brown and Gilisa G	iould	29 Hwy cro	29 Hwy crossing					
Current Weatl	ner Conc	ditions: clear		Facility Nar	me:	whispering pi	nes MHP			
Weather cond	itions for	r the past 10 days:0	.96 inches	Permit Num	nber:	MO0118991				
Drought condi	tions?: N	No drought ☑ ; Phas	se I □ ; Phase	· II □ ; Phas	e <mark>III □ ; P</mark> ł	nase IV □ ; Ur	nknown 🗆			
Site Location										
Location Coordinates (Universal Transverse Mercator Projection, In Meters										
Site 01	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:			
		0346357		4375045			5.18 meters			
Site 11	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:			
		0346148		4374971			9.14 meters			
	<u></u>			,						
Photos:			T	T		<u> </u>				
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose			
30	downstr	ream	31	upstream		32	downstream			
Photo ID#	P	Photo Purpose	Photo ID#	Photo Purpose		Photo ID#	Photo Purpose			
33		upstream								
	_									
Photo ID#	Р	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose			
			<u> </u>	<u> </u>						
Uses Observ	ed:				_					
☐ Swimming	ſ	☐ Skin diving	☐ SCUBA di	iving	☐ Tubing	g	☐ Water Skiing			
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadin	ıg	☐ Rafting			
☐ Hunting		☐ Trapping	☐ Fishing	☐ Fishing		of the above	☐ Other:			
Describe:										

WBID#	273
Site #	5

Data Sheet B- Site Characterization (Continued)

Surrounding Condition	ions:					
☐ City/County parks	☐ playgrounds	☐ MDC conservation	on lands 🔲 Urbar	n areas	☐ Rural	Residential
☐ Campgrounds	☐ State parks	□ National Forests	☐ Nature	e trails	☐ Stairs	/walkways
☐ Boating accesses	☑ Fence	☐ No tresspass sign	n ☑ Steep	Slopes	☐ Other	r:
Comments:						
none						
1						
	••.					
Evidence of Human U				. 0.4	T	
☐ Roads	☐ Foot path/prints			oing Sites	☐ Rope	
□ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge) Li Fisiiii	ng Tackle	☐ Livesi	ock watering
comments/other:						
none						
1						
1						
<u> </u>						
Substrate:						
% Cobble	% Gravel	% Sand	% Silt	% Mud/0	Clay	% Bedrock
		20	30	50	•	
Aquatic Vegatation:						
none						
1						
L						
	_	_			_	_
Water Characteristics						
Odor:	☐ Sewage	,	☐ Chemical		None	☐ Other:
Color:	☐ Clear	□Green I	☐ Gray	<u> </u>	Milky	☑ Other:
						brown
Bottom Deposit:	□ Sludge		☐ Fine sediments		None	☐ Other:
Surface Deposit:	□ Oil	☐ Scum	☑ Foam	∐N	Vone	□ Other:

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
omments: (Please re	cord any additional comments h	nere.)			
,	,	,			
	none				
lease verify that yo omplete.	ou have completed all so	ections, checke	ed all applicable	boxes, and that the f	orm is
urveyor's Signature:	gilisa gould		_Date of Survey:	10.09.07	
Organization:	SES, Inc.		Position:	field team leader	

																		Disso	lved Ox	ygen		
	Waterbo	ody ID:	273			Site #:	5									Date:	10.9.07			Time:	4:00pm	
	Estimate	ed Chann	nel Incisi	on:	4.0	(m) (hei	ght betw	een low b	ank widt	th and wa	iter)					Di	ssolved	Oxygen:	•	7.3	(mg/L)	
			•			-		izontal Ac	•		•			(, ,)								
		UTM X UTM X		0346357			UTM Y: UTM Y:		437504: 437447			+/-	5.18 9.14	(meters)		Dı	ssolved	Oxygen:			(% sat)	
	Average	Stroom	Width			-	6	(meters)	ī	ength of	Survey	Sagment:		150	(meters)		Specifi	ic Cond:			(μS/cm)	
	_		mgth of I				0	(meters)	1	20x avera	-	_		130	(ineters)	Wa	ter Temp	erature:		25.7	(°C)	
	Fiel	d Staff:	Lariss	a Brown		and	Gilisa G	ould														
										Tra	nsect C	ross-Se	ction									
	0	1	0)2	0	13		04 05			0	06		07		8	09		10		11	
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.4	0.05	0.5	0.01	0.5	0.05	0.5	0.10	0.6	0.05	0.5	0.10	0.2	0.05	0.4	0.15	0.3	0.05	0.6	0.01	0.6	0.20
2	0.8	0.10	1.0	0.05	1.0	0.15	1.0	0.40	1.2	0.25	1.0	0.45	0.4	0.15	0.8	0.05	0.6	0.20	1.2	0.01	1.2	0.20
3	1.2	0.20	1.5	0.15	1.5	0.10	1.5	0.50	1.8	0.25	1.5	0.40	0.6	0.15	1.2	0.15	0.9	0.20	1.8	0.05	1.8	0.30
4	1.6	0.20	2.0	0.15	2.0	0.15	2.0	0.60	2.4	0.20	2.0	0.50	0.8	0.15	1.6	0.05	1.2	0.15	2.4	0.15	2.4	0.20
5	2.0	0.25	2.5	0.20	2.5	0.20	2.5	0.45	3.0	0.20	2.5	0.55	1.0	0.15	2.0	0.10	1.5	0.10	3.0	0.20	3.0	0.20
6	2.4	0.20	3.0	0.20	3.0	0.20	3.0	0.35	3.6	0.15	3.0	0.55	1.2	0.15	2.4	0.10	1.8	0.10	3.6	0.20	3.6	0.20
7	2.8	0.10	3.5	0.25	3.5	0.15	3.5	0.30	4.2	0.15	3.5	0.40	1.4	0.10	2.8	0.05	2.1	0.05	4.2	0.25	4.2	0.15
8	3.2	0.15	4.0	0.15	4.0	0.15	4.0	0.20	4.8	0.15	4.0	0.20	1.6	0.15	3.2	0.05	2.4	0.05	4.8	0.30	4.8	0.20
9	3.6	0.05	4.5	0.05	4.5	0.15	4.5	0.15	5.4	0.10	4.5	0.10	1.8	0.05	3.6	0.01	2.7	0.01	5.4	0.20	5.4	0.10
aight Bank	4.0	0.00	5.0	0.00	5.0	0.00	5.0	0.00	6.0	0.00	5.0	0.00	2.0	0.00	4.0	0.00	3.0	0.00	6.0	0.00	6.0	0.00
eature Type	no	ool	n	ool	no	ool	n	ool	n/	ool	n/	ool		un	rifi	fle	rı	ın	po	ol.	po	ol
iffle, run, or pool	рс)OI	pc	<i>7</i> 01	ρc	<i>7</i> 01	l P	001	ρι	<i>7</i> 01	ρι	<i>7</i> 01	1	um	1111	110	11	†11	po	O1	ро	O1

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.09.07	
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WBID#	273
Site #	6

Date & Time:	10.9.07	5:00pm		Site Location	on Descript	ion (e.g. road	crossing):		
Personnel:	Larissa	Brown and Gilisa G	ould	Hwy 371 cr	ossing				
Current Weatl	ner Cond	ditions: clear		Facility Nar	me:	whispering pi	nes MHP		
Weather cond	itions fo	r the past 10 days:0	.96 inches	Permit Num	nber:	MO0118991			
Drought condi	tions?: N	No drought ☑ ; Pha	se I □ ; Phase	·II □ ; Phas	e <mark>III □ ; P</mark>	nase IV □ ; Ur	nknown 🗆		
Site Location	1:								
		(Universal Transver	se Mercator Pr	ojection, In	Meters				
Site 01	Easting	ı (UTM X):	Northing (UTN	Л Y):		Horizontal Ac	curacy:		
		0345264		4374529			6.1 meters		
Site 11	Easting	ı (UTM X):	Northing (UTN	<u></u> И Y):		Horizontal Ac	curacy:		
		0345111		4374543			5.8 meters		
	<u> </u>								
Photos:			т	T		ı	T		
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose		
34	downst	ream, T1	35	upstream,	Γ1	36	downstream, T11		
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
37		upstream, T11							
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
Uses Observ	ed:								
☐ Swimming	J	☐ Skin diving	☐ SCUBA di	iving	☐ Tubing]	☐ Water Skiing		
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadin	g	□ Rafting		
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:		
Describe:			•		•				

WBID#	273
Site #	6

Data Sheet B- Site Characterization (Continued)

Surrounding Conditi	ions:				
☐ City/County parks	□ playgrounds	☐ MDC conservati	ion lands 🛭 Urba	an areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	□ National Forests			☐ Stairs/walkways
☐ Boating accesses	☑ Fence	☐ No tresspass sig	gn □ Stee	p Slopes	☐ Other:
Comments:			<u> </u>		
none					
ĺ					
Evidence of Human U	II.a.				
		T De eldela Marin		' - Citoo	To Dana audiana
☐ Roads ☐ RV/ATV Tracks	☐ Foot path/prints	☐ Dock/platform		ping Sites	☐ Rope swings
	☐ Fire pit/ring	☐ NPDES Discharg	<u>}e □ רופוווו</u>	ing Tackle	☐ Livestock watering
comments/other: none					
HOHE					
1					
1					
4					
Substrate:					
% Cobble	% Gravel	% Sand	% Silt	% Mud/0	Clay % Bedrock
<u> </u>		25	25	50	-
Aquatic Vegatation:					
	·				
none					
1					
<u> </u>					
141 (- Observatoriotia					
Water Characteristics		□ NA	T Ob arraigal		' Othor
Odor:	☐ Sewage	□ Musky	☐ Chemical		None
Color:	☐ Clear	□Green	☐ Gray		Milky ☑ Other:
Dette in Demonite		□ Solids	T Circ andiment	- 171	brown
Bottom Deposit:	☐ Sludge ☐ Oil	☐ Solids	☐ Fine sediments ☐ Foam		None ☐ Other: None ☐ Other:
Surface Deposit:	LI OII	□ Scuiii	M F∪aiii		

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recrea	eational uses)
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Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (iii)				
Comments: (Please re	cord any additional comments l	nere.)			
	none				
					_
Please verify that yo complete.	ou have completed all so	ections, checke	ed all applicable	boxes, and that the f	orm is
Surveyor's Signature:	gilisa gould		_Date of Survey:	10.09.07	

																		Disso	lved Ox	ygen		
	Waterbo	ody ID:	273			Site #:	6									Date:	10.9.07			Time:	5:00pm	
	Estimate	ed Chann	nel Incisio	on:	3.0	(m) (hei	ght betw	een low b	ank widt	th and wa	ater)					Di	ssolved (Oxvøen:		•		
	GPS Lo	cation - I	Easting (UTM X)	, Northin	g (UTM	Y), Hori	izontal Ac	curacy I	Estimate	(EPE / P	DOP / FO	OM)			2.	.5501704	<i>311)</i> 6 111		- 0.2	(1118/2)	
		UTM X		0345264							•	+/-	6.1	(meters)		Di	ssolved (Oxygen:			(% sat)	
	11	UTM X	<u>: </u>	0345111		1	UTM Y:		437454	3	•	+/-	5.8	(meters)			~ .~					
	Average	Stream	Width:				6	(meters)	L	ength of	Survey S	Segment:		150	(meters)		Specifi	c Cond:			(μS/cm)	
	(To dete	ermne Le	ngth of F	Reach)					(2	20x avera	ge strear	n width)				Wa	ter Temp	erature:		23.6	(°C)	
	Fiel	d Staff:	Larissa	a Brown		and	Gilisa G	ould														
										Tra	nsect C	ross-Se	ction									
		1	0	2	0	3	,)4	0)5	06 07 08					08 09			10		11	
	Distance		Distance		Distance		Distance		Distance		Distance		Distance				Distance		Distance		Distance	
Station	(m)	Depth (m)		Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)		Depth (m)	Distance (m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.4	0.10	0.6	0.10	0.6	0.05	0.7	0.05	0.6	0.01	0.6	0.05	0.4	0.10	0.5	0.05	0.4	0.05	0.6	0.50	0.5	0.01
2	0.8	0.15	1.2	0.40	1.2	0.15	1.4	0.30	1.2	0.10	1.2	0.15	0.8	0.25	1.0	0.15	0.8	0.20	1.2	0.20	1.0	0.01
3	1.2	0.10	1.8	0.40	1.8	0.30	2.1	0.60	1.8	0.10	1.8	0.15	1.2	0.30	1.5	0.10	1.2	0.25	1.8	0.20	1.5	0.05
4	1.6	0.10	2.4	0.10	2.4	0.40	2.8	0.50	2.4	0.10	2.4	0.10	1.6	0.30	2.0	0.15	1.6	0.40	2.4	0.35	2.0	0.10
5	2.0	0.30	3.0	0.15	3.0	0.35	3.5	0.55	3.0	0.10	3.0	0.10	2.0	0.30	2.5	0.10	2.0	0.40	3.0	0.40	2.5	0.10
6	2.4	0.40	3.6	0.30	3.6	0.30	4.2	0.50	3.6	0.15	3.6	0.15	2.4	0.25	3.0	0.15	2.4	0.35	3.6	0.35	3.0	0.20
7	2.8	0.30	4.2	0.40	4.2	0.30	4.9	0.40	4.2	0.15	4.2	0.15	2.8	0.20	3.5	0.20	2.8	0.35	4.2	0.40	3.5	0.20
8	3.2	0.15	4.8	0.30	4.8	0.30	5.6	0.25	4.8	0.15	4.8	0.10	3.2	0.20	4.0	0.15	3.2	0.30	4.8	0.15	4.0	0.20
9	3.6	0.15	5.4	0.20	5.4	0.15	6.3	0.10	5.4	0.10	5.4	0.10	3.6	0.15	4.5	0.05	3.6	0.30	5.4	0.05	4.5	0.10
Right Bank		0.00	6.0	0.00	6.0	0.00	7.0	0.00	6.0	0.00	6.0	0.00	4.0	0.00	5.0	0.00	4.0	0.00	6.0	0.00	5.0	0.00
Feature Type		_								•		•										
riffle, run, or pool	pc	ool	po	ool	po	ol	po	ool	ро	ool	rif	fle	p	ool	riff	le	po	ol	po	ol	riff	fle

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.09.07	
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WBID#	273
Site #	7

Date & Time:	10.10.0	7 10:30		Site Location	on Descrip	tion (e.g. road	crossing):		
Personnel:	Larissa	Brown and Gilisa G	ould	Hwy 371 cr	ossing				
Current Weather Conditions: clear				Facility Name: whispering pines MHP					
Weather conditions for the past 10 days:0.96 inches				Permit Num	Permit Number: MO0118991				
Drought condi	tions?: N	No drought ☑ ; Phas	se I □ ; Phase	⊧II □ ; Phas	e III □ ; Pł	nase IV □ ; Uı	nknown □		
Site Location									
		(Universal Transvers			Meters				
Site 01 Easting (UTM X):			Northing (UTN	И Y):		Horizontal Ac	curacy:		
0344652				4372568			5.5 meters		
Site 11 Easting (UTM X):			Northing (UTN	И Y):		Horizontal Ac	curacy:		
0344545		4372436				4.9 meters			
Photos:									
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose		
42	downst	ream, T1	43	upstream, T1		44	downstream, T11		
Photo ID#	Photo ID# Photo Purpose		Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
45		upstream, T11							
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
Uses Observ	ed:		.						
☐ Swimming		☐ Skin diving	☐ SCUBA di	iving	☐ Tubing	9	☐ Water Skiing		
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadin	ıg	□ Rafting		
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:		
Describe:									

WBID#	273
Site #	7

	Data Sheet B-	Site Characterization	ı (Contii	nued)		
			-	-		
Surrounding Conditi					•	
☐ City/County parks	☐ playgrounds	☐ MDC conservation	n lands	☐ Urban areas		Residential
☐ Campgrounds	☐ State parks	□ National Forests		☐ Nature trails	_	walkways
☐ Boating accesses	☐ Fence	☐ No tresspass sign	1	☑ Steep Slopes	☐ Other	:
Comments:						
none						
T idente of Human I						
Evidence of Human I		D D I / Jaffa mas			T - D	•
☐ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sites	☐ Rope s	
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	;	☐ Fishing Tackle	Livesio	ock watering
comments/other:						
none						
						Į.
Substrate;						
Substrate:	% Gravel	% Sand	% Silt	% Mud/	Clav	% Bedrock
Substrate: % Cobble	% Gravel		% Silt 50	% Mud/	Clay	% Bedrock
	% Gravel	% Sand 50	% Silt 50	% Mud/	Clay	% Bedrock
% Cobble	% Gravel			% Mud/	Clay	% Bedrock
	% Gravel			% Mud/	Clay	% Bedrock
% Cobble	% Gravel			% Mud/	Clay	% Bedrock
% Cobble Aquatic Vegatation:	% Gravel			% Mud/	Clay	% Bedrock
% Cobble Aquatic Vegatation:	% Gravel			% Mud/	Clay	% Bedrock
% Cobble Aquatic Vegatation:	% Gravel			% Mud/	Clay	% Bedrock
% Cobble Aquatic Vegatation:				% Mud/	Clay	% Bedrock
% Cobble Aquatic Vegatation: none		50			Clay	% Bedrock
% Cobble Aquatic Vegatation: none Water Characteristic	s:	50 □ Musky	50 □ Chem	ical ☑		
% Cobble Aquatic Vegatation: none Water Characteristic: Odor:	s: □ Sewage	50 □ Musky	50	ical ☑	None	□ Other:
% Cobble Aquatic Vegatation: none Water Characteristic: Odor:	s: □ Sewage	□ Musky □ Green □	50 □ Chem □ Gray	ical ☑	None	□ Other:

complete.

Surveyor's Signature: gilisa gould

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
Comments: (Please re	cord any additional comments	nere.)			
	none				
Please verify that vo	ou have completed all s	ections checke	d all annlicable	hoves and that the	form is

Date of Survey: _____10.10.07

Position: field team leader

																		Disso	lved Ox	ygen		
		ody ID:														Date:	10.10.07	,		Time:	10:30	
								een low b								Di	ssolved (Oxygen:	15.2		(mg/L)	
	01	UTM X	<u> </u>	0344652	2		UTM Y:		437256	8	•	DOP / FO +/- +/-	5.5	(meters)		Di	ssolved (Oxygen:			(% sat)	
		UTM X		0344545		•					•		4.9	(meters)	•		Specifi	c Cond:			(μS/cm)	
		Stream ermne Le					4	(meters)		ength of 20x avera	•	_		150	(meters)	Wa	ter Temp	erature:		18.1	(°C)	
	Fiel	d Staff:	Larissa	a Brown		and	Gilisa G	ould														
										Tra	nsect C	ross-Se	ction									
	0	1	0	2	0	3		04	0)5	0	16	(07	08	8	0:	9	10	0	11	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.05	0.3	0.10	0.4	0.05	0.4	0.05	0.2	0.05	0.6	0.10	0.6	0.05	0.6	0.10	0.6	0.15	0.5	0.20	0.5	0.05
2	1.0	0.05	0.6	0.15	0.8	0.10	0.8	0.30	0.4	0.20	1.2	0.35	1.2	0.10	1.2	0.30	1.2	0.30	1.0	0.60	1.0	0.20
3	1.5	0.05	0.9	0.20	1.2	0.30	1.2	0.50	0.6	0.20	1.8	0.20	1.8	0.30	1.8	0.35	1.8	0.90	1.5	0.50	1.5	0.25
4	2.0	0.01	1.2	0.25	1.6	0.30	1.6	0.60	0.8	0.30	2.4	0.10	2.4	0.35	2.4	0.20	2.4	0.95	2.0	0.35	2.0	0.35
5	2.5	0.05	1.5	0.25	2.0	0.30	2.0	0.65	1.0	0.30	3.0	0.20	3.0	0.50	3.0	0.25	3.0	0.80	2.5	0.35	2.5	0.35
6	3.0	0.05	1.8	0.15	2.4	0.15	2.4	0.50	1.2	0.30	3.6	0.20	3.6	0.60	3.6	0.30	3.6	0.60	3.0	0.25	3.0	0.40
7	3.5	0.10	2.1	0.10	2.8	0.10	2.8	0.45	1.4	0.25	4.2	0.20	4.2	0.45	4.2	0.30	4.2	0.65	3.5	0.20	3.5	0.45
8	4.0	0.15	2.4	0.05	3.2	0.10	3.2	0.25	1.6	0.15	4.8	0.20	4.8	0.20	4.8	0.20	4.8	0.40	4.0	0.20	4.0	0.30
9	4.5	0.10	2.7	0.01	3.6	0.05	3.6	0.15	1.8	0.10	5.4	0.05	5.4	0.05	5.4	0.10	5.4	0.25	4.5	0.05	4.5	0.10
ight Bank	5.0	0.00	3.0	0.00	4.0	0.00	4.0	0.00	2.0	0.00	6.0	0.00	6.0	0.00	6.0	0.00	6.0	0.00	5.0	0.00	5.0	0.00
eature Type		1		1		-1		1		1		1		1		-1		-1		-1	_	-1
ffle, run, or pool	pc	ool	po	ool	pc	ool	po La	ool	po	ool	pc	ool	р	ool	po	01	po	OI	po	01	po	01

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.09.07	0. 1 0. 11
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WBID#	273
Site #	8

Date & Time:	10.10.0	7 11:30		Site Location	on Descript	tion (e.g. road	crossing):		
Personnel:	Larissa	Brown and Gilisa G	ould	downstream of 371 crossing point					
Current Weather Conditions: clear				Facility Name: whispering pines MHP					
Weather conditions for the past 10 days:0.96			.96	Permit Nun	nber:	MO0118991			
Drought conditions?: No drought ☑ ; Phase I □ ; Pha			se I □ ; Phase	II □ ; Phas	e III □ ; Pł	nase IV □ ; Ur	nknown 🗆		
Site Location									
Location Coor	dinates	(Universal Transvers	se Mercator Pr	rojection, In	Meters				
Site 01 Easting (UTM X): Nor			Northing (UTN	И Y):		Horizontal Ac	ccuracy:		
0343555				4368654			7.6 meters		
Site 11 Easting (UTM X):			Northing (UTM Y):			Horizontal Ac	ccuracy:		
0343485			4368514				3 meters		
Photos:						_			
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose		
46	downst	ream, T1	47	upstream, T1		48	downstream, T11		
Photo ID#	Photo ID# Photo Purpose		Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
49		upstream, T11							
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
Uses Observ	ed:								
☐ Swimming		☐ Skin diving	☐ SCUBA di	iving	☐ Tubing	9	☐ Water Skiing		
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadin	ıg	□ Rafting		
☐ Hunting	_	☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:		
Describe:			•						

WBID#	273
Site #	8

Data Sheet B- Site Characterization (Continued)

Surrounding Condition	ons:				
☐ City/County parks	☐ playgrounds		MDC conservation land	ls □ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks		National Forests	☐ Nature trails	☐ Stairs/walkways
☐ Boating accesses	☐ Fence		No tresspass sign	☐ Steep Slopes	☑ Other:
Comments:				corn fiel	d
Evidence of Human U			De els /mlotforms	Compine Sites	I Dana awinga
☐ Roads ☐ RV/ATV Tracks	☐ Foot path/prints ☐ Fire pit/ring		Dock/platform NPDES Discharge	☐ Camping Sites☐ Fishing Tackle	☐ Rope swings ☐ Livestock watering
comments/other:		LIV	IPDES DISCHARGE	LI FISHING LACKIE	LIVESTOCK WATERING
none					
Substrate:					
% Cobble	% Gravel	% Sa !	and % Silt 50 20		
Aquatic Vegatation:					
none					
Water Characteristics					
Odor:	☐ Sewage		Musky ☐ Che		None
Color:	☐ Clear	□G	Green ☐ Gra	<u>у</u> Ц I	Milky ☑ Other:
D. (()) D. (())	T Olivers		2 P I=		brown
Bottom Deposit:	☐ Sludge ☐ Oil		Solids ☐ Fine Scum ☐ Foa		None ☐ Other: None ☐ Other:
Surface Deposit:		ப	Cum 🗀 Fua	الكا اللا	ione 🗆 Other.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreation

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
comments: (Please red	cord any additional comments h	nere.)			
	none				
Please verify that yo complete.	u have completed all so	ections, checke	ed all applicable	boxes, and that the f	orm is
urveyor's Signature:	gilisa gould		_Date of Survey:	10.10.07	

																		Disso	lved Ox	ygen		
	Waterbo	ody ID:	273		_	Site #:	8		•							Date:	10.10.07	,		Time:	11:30	
	Estimate	ed Chann	nel Incisio	on:	5.0	(m) (hei	ght betw	een low b	ank widt	th and wa	ater)					•	ssolved (Oxvgen:	6.3	•	(mg/L)	
	GPS Lo	cation - I	Easting (UTM X)	, Northin	g (UTM	Y), Hor	izontal Ac	curacy I	Estimate	(EPE / P	DOP / FO	OM)					, 8			(8)	
		UTM X		0343555							•	+/-	7.62	(meters)		Di	ssolved (Oxygen:			(% sat)	
	11	UTM X	:	0343485	5	1	UTM Y:		436851	4	•	+/-	3.48	(meters)								
	Average	Stream	Width:				6	(meters)	L	ength of	Survey S	Segment:		150	(meters)		Specifi	c Cond:			(μS/cm)	
			ngth of F					/		20x avera						Wa	ter Temp	erature:	23.5		(°C)	
	Fiel	d Staff	Larissa	Rrown		and	Gilisa G	lould														
	1 101	a Starr.	Darisse	DIOWII		una	Gilisa C	ouiu						•								
					ī		1			Tra	nsect C	ross-Se	ction									
	0	1	0	2	0	3		04	0)5	0	6		07	08	3	0	9	1	0	1	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.05	0.7	0.15	0.7	0.05	0.7	0.10	0.7	0.10	0.8	0.01	0.7	0.05	0.7	0.10	0.7	0.10	0.6	0.05	0.5	0.10
2	1.0	0.10				0.10		0.40						0.20	1.4	0.20		0.35	1.2	0.20		0.50
3	1.5					0.30		0.40		0.50				0.40	2.1	0.30		0.35	1.8			0.50
4	2.0					0.30		0.50						0.60	2.8	0.45	2.8	0.50				0.65
-								0.50							3.5				3.0			
3	2.5					0.30										0.45		0.45				0.50
6	3.0					0.15		0.50						0.60	4.2	0.40		0.40	3.6			0.30
7	3.5	0.15	4.9	0.85	4.9	0.10	4.9	0.50	4.9	0.60	5.6	0.20	4.9	0.50	4.9	0.35	4.9	0.35	4.2		3.5	0.20
8	4.0	0.15	5.6	0.75	5.6	0.10	5.6	0.35	5.6	0.20	6.4	0.10	5.6	0.30	5.6	0.20	5.6	0.20	4.8	0.35	4.0	0.10
9	4.5	0.15	6.3	0.55	6.3	0.05	6.3	0.10	6.3	0.01	7.2	0.01	6.3	0.01	6.3	0.01	6.3	0.01	5.4	0.20	4.5	0.05
Right Bank	5.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	5.0	0.00
Feature Type																						
riffle, run, or pool	pc	ool	po	ol	po	ol	p	ool	po	ool	pc	ool	p	ool	poo	ol	po	ol	po	ol	po	ol

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: gilisa gould Date: 11.09.07	
-------------------------------------	--

WBID#	273
Site #	9

Date & Time:	10.10.0	7 12:30		Site Location Description (e.g. road crossing):								
Personnel:	Larissa	Brown and Gilisa G	ould	woodruff Rd access								
Current Weatl	ner Conc	ditions: clear		Facility Nar	Name: whispering pines MHP							
Weather cond	itions for	r the past 10 days:0	.96 inches	Permit Num	it Number: MO0118991							
Drought condi	tions?: N	No drought ☑ ; Phas	se I □ ; Phase	II □ ; Phase III □ ; Phase IV □ ; Unknown □								
Site Location:												
Location Coor	dinates	(Universal Transvers	se Mercator Pr	rojection, In	Meters							
Site 01	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Accuracy:						
		0343656		4366752			5.18 meters					
Site 11	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:					
		0343890		4366693		5.18 meters						
,	<u> </u>											
Photos:												
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose					
50	downst	ream, T1	51	upstream,	T1	52	downstream, T11					
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose					
53		upstream, T11										
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose					
Uses Observ	ed:											
☐ Swimming ☐ Skin diving			☐ SCUBA diving		☐ Tubin	g	☐ Water Skiing					
☐ Wind surfing ☐ Kayaking		☐ Kayaking	☐ Boating		□ Wadir	ng	☐ Rafting					
☐ Hunting ☐ Trapping		☐ Trapping	☐ Fishing		☑ None	of the above	□ Other:					
Describe:												

WBID#	273
Site #	9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditi	ons:					
☐ City/County parks	☐ playgrounds		nservation lands			ıl Residential
☐ Campgrounds	☐ State parks	□ National	Forests	□ Nature trails		s/walkways
☐ Boating accesses	☑ Fence	□ No tress	spass sign	☑ Steep Slope	es 🗆 Oth	er:
Comments:						
none						
Evidence of Human I	l leo:					
□ Roads	☐ Foot path/prints	☐ Dock/pla	tform	☐ Camping Sit	tos I 🗆 Pon	o swings
☐ RV/ATV Tracks	☐ Flire pit/ring	□ NPDES I		☐ Camping Sit☐ Fishing Tacl		e swings stock watering
comments/other:	I — File pluring		Jiscriarye	☐ FISHING Tau	VIE I TINE	Stock Watering
.comments/other.						
none						
Substrate:						
% Cobble	% Gravel	% Sand	% Silt	% M	ud/Clay	% Bedrock
	10	60	20		10	
Aquatic Vegatation:						
Aquatic Vegatation.						
none						
Horio						
Water Characteristic	s:					
Water Characteristic Odor:		☐ Musky	☐ Chem	ical	☑ None	☐ Other:
	s: □ Sewage □ Clear	□ Musky	□ Chem	ical	☑ None □ Milky	□ Other: ☑ Other:
Odor:	☐ Sewage			ical		
Odor:	☐ Sewage		☐ Gray	ical sediments		☑ Other:

WBID # 273 Site # 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational use	Additional Stream I	Morphology: (Record isolated	pools or other features identified during	the survey that may support recreational uses)
---	---------------------	------------------------------	---	--

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)			
	decess location (m)							
Comments: (Please re	cord any additional comments h	nere.)						
	none							
Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.								
Surveyor's Signature:	gilisa gould		_Date of Survey:	10.10.07				
0	050 1		Б. '''	Calabara III				
Organization:	SES, Inc.		_ Position:	field team leader				

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

																		Disso	lved Ox	vygen		
	Waterbo	ody ID:	273		•	Site #:	9		<u>-</u>							Date:	10.10.07	,		Time:	12:30	
	Estimate	ed Chann	nel Incisi	on:	6.0	(m) (hei	ght betw	een low b	ank wid	th and wa	ater)					•	ssolved (•		(mg/L)	
	GPS Lo	cation - I	Easting (UTM X)	, Northin	ng (UTM	Y), Hor	izontal Ac	curacy I	Estimate	(EPE / P	DOP / FO	OM)			2.		<i>311)</i> 6 111			(1118/2)	
		UTM X		0343656							•	+/-	5.18	(meters)		Di	ssolved (Oxygen:			(% sat)	
	11	UTM X	:	0343890)		UTM Y:		436669	3	•	+/-	5.18	(meters)	•		a .a				(6 ()	
	Average	Stream	Width:				8	(meters)	L	ength of	Survey S	Segment:		160	(meters)		Specifi	c Cond:			(μS/cm)	
	(To dete	rmne Le	ngth of F	Reach)					(2	20x avera	ge strear	n width)				Wa	ter Temp	erature:	23.4		(°C)	
	Fiel	d Staff:	Larissa	a Brown		and	Gilisa G	ould														
										Tra	nsect C	ross-Se	ction									
	0	1	0	2	0	13		04	()5	0	6		07	08	3	0:	9	1	0	1:	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.8	0.05	0.8	0.01	0.8	0.05	0.8	0.05	0.7	0.05	0.9	0.01	0.8	0.10	0.7	0.05	0.6	0.01	1.0	0.40	0.9	0.35
2	1.6	0.05	1.6	0.15	1.6	0.20	1.6	0.40	1.4	0.20	1.8	0.05	1.6	0.40	1.4	0.75	1.2	0.10	2.0	0.50	1.8	0.70
3	2.4	0.05	2.4	0.25	2.4	0.35	2.4	0.55	2.1	0.35	2.7	0.05	2.4	0.40	2.1	0.35	1.8	0.20	3.0	0.00	2.7	0.90
4	3.2	0.15	3.2	0.30	3.2	0.70	3.2	0.45	2.8	0.60	3.6	0.01	3.2	0.30	2.8	0.40	2.4	0.25	4.0	0.45	3.6	1.00
5	4.0	0.10	4.0	0.30	4.0	0.85	4.0	0.40	3.5	0.60	4.5	0.05	4.0	0.15	3.5	0.50	3.0	0.20	5.0	0.85	4.5	1.00
6	4.8	0.10	4.8	0.45	4.8	0.55	4.8	0.35	4.2	0.60	5.4	0.10	4.8	0.15	4.2	0.50	3.6	0.30	6.0	1.00	5.4	0.95
7	5.6	0.30	5.6	0.40	5.6	0.15	5.6	0.40	4.9	0.50	6.3	0.15	5.6	0.10	4.9	0.60	4.2	0.10	7.0	1.00	6.3	0.95
8	6.4	0.25	6.4	0.20	6.4	0.10	6.4	0.35	5.6	0.30	7.2	0.30	6.4	0.05	5.6	0.55	4.8	0.10	8.0	0.95	7.2	0.75
9	7.2	0.05	7.2	0.05	7.2	0.05	7.2	0.10	6.3	0.30	8.1	0.30	7.2	0.01	6.3	0.30	5.4	0.05	9.0	0.65	8.1	0.40
Right Bank	8.0	0.00	8.0	0.00	8.0	0.00	8.0	0.00	7.0	0.00	9.0	0.00	8.0	0.00	7.0	0.00	6.0	0.00	10.0	0.00	9.0	0.00
Feature Type																						
riffle, run, or pool	pc	ool	pc	ool	pc	ool	p	ool	po	ool	po	ool	p	ool	poo	ol	po	ol	po	ol	po	ol

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07	
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WBID#	273
Site #	10

Field Data Sheets For Recreatiuonal Use Stream Surveys

Data Sheet B-Site Characterization

				_					
Date & Time:	10.10.0	07 2:00pm		Site Location	on Descrip	tion (e.g. road	crossing):		
Personnel:	Larissa	Brown and Gilisa G	ould	Bee creek l	olv. Crossi	ng			
Current Weatl	ner Cond	ditions: clear		Facility Nar	me:	whispering pi	nes MHP		
Weather cond	itions fo	r the past 10 days:0	.96 inches	Permit Nun	nber:	MO0118991			
Drought condi	Drought conditions?: No drought ☑ ; Phase I □ ; Phase II □ ; Phase III □ ; Phase IV □ ; Unknown □								
Site Location	1:								
		(Universal Transver	se Mercator Pr	rojection, In	Meters				
Site 01	Easting	ı (UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:		
		0343229	<u> </u>	4364969			3.65 meters		
Site 11	Easting	ı (UTM X):	Northing (UTN	М Y):		Horizontal Ac	ccuracy:		
0343384			4364876			2.5 meters			
2.6 110.010									
Photos:									
Photo ID#	Photo ID# Photo Purpose		Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose		
54	upstrea	ım T11	55	Downstream T11		56	downstream T1		
Photo ID#	P	Photo Purpose	Photo ID# Photo Purpose		Photo ID#	Photo Purpose			
57		upstream T1							
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose		
			<u> </u>						
Uses Observ	ed:								
☐ Swimming		☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	9	□ Water Skiing		
☐ Wind surfi	ng	☐ Kayaking	□ Boating		□ Wadin	ıg	☐ Rafting		
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:		
Describe:			•		•				

WBID#	273
Site #	10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditi							
☐ City/County parks	☐ playgrounds		ervation lands	☐ Urban a			Residential
☐ Campgrounds	☐ State parks	□ National Fo		☐ Nature t			s/walkways
☐ Boating accesses	☐ Fence	☐ No tresspas	ss sign	☐ Steep S	lopes	☐ Othe	r:
Comments:							
none							
Evidence of Human	Use:						
□ Roads	☐ Foot path/prints	☐ Dock/platfor		☐ Campin	g Sites	☐ Rope	
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Disc	charge	☐ Fishing			tock watering
comments/other:							
none							
Substrate:							
% Cobble	% Gravel	% Sand	% Silt	-	% Mud/0	Clay	% Bedrock
			20		10	-	60
Aquatic Vegatation:							
none							
none							
Water Characteristic	s:						
Odor:	□ Sewage	☐ Musky	☐ Chem	iical	☑ N	None	☐ Other:
Color:	☐ Clear	□Green	☐ Gray		☑ N	Milky	☑ Other:
							brown
Bottom Deposit:	☐ Sludge	☐ Solids		sediments		None	☐ Other:
Surface Deposit:	□ Oil	☐ Scum	☐ Foam		■N	lone	☐ Other:

WBID # 273 Site # 10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

	Additional Stream	Morphology:	(Record isolated pools or	other features identified during	the survey that may	support recreational uses)
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Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)		
	access location (III)						
Commental (Disease		\					
Comments. (Please re	cord any additional comments h	nere.)					
	none						
	none						
Please verify that you have completed all sections, checked all applicable boxes, and that the form is							
complete.	ou nave completed all st	ections, checke	an applicable	boxes, and mat me i	Oilli is		
Surveyor's Signature:	gilisa gould		_Date of Survey:	10.10.07			
Organization:	SES, Inc.		Position:	field team leader			

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

																	D1330	Ived Ox	ygcn		
Waterbo	dy ID:	273		•	Site #:	10		ı							Date:	10.10.07			Time:	2:00pm	
Estimate	ed Chann	el Incisio	on:	4.0	4.0 (m) (height between low bank width and water)										•					1	
		•			-			-		,											
										_	+/-				Di	ssolved (Oxygen:			(% sat)	
11	UIMA		0343384	+		UIM Y:		430487	0	•	+/-	2.3	(meters)			Specifi	c Cond:			(uS/cm)	
Average	Stream	Width:				9	(meters)	L	ength of	Survey S	Segment:		180	(meters)		1	•			, ч	
(To dete	rmne Le	ngth of R	Reach)					(2	20x avera	ge strear	n width)				Wa	ter Temp	erature:	24.9		(°C)	
Fiel	d Staff:	Larissa	Brown		and	Gilisa G	ould						•								
									Tra	nsect C	ross-Se	ction									
0	1	0:	2	0	13		04	()5	0	6		07	08	3	0:	9	1	0	11	1
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.7	0.55	0.9	0.90	0.9	0.80	1.0	0.80	0.9	0.90	0.9	0.85	0.9	0.95	1.0	0.95	0.9	0.95	1.0	0.10	0.8	0.01
1.4	0.60																			1.6	0.01
2.1	0.85	2.7		2.7								2.7	1.00							2.4	0.15
													1.00								0.15
																					0.10
						6.0	1.00										1.00				0.10
																					0.10
																					0.10
																					0.01
																					0.00
7.0	0.00	7.0	0.00	7.0	0.00	10.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	10.0	0.00	7.0	0.00	10.0	0.00	0.0	0.00
po	ol	po	ol	рс	ool	p	ool	ро	ool	ро	ool	p	ool	poo	ol	po	ol	po	ol	rift	fle
	Estimate GPS Loc 01 11 Average (To dete Fiel 0 0.7 1.4 2.1 2.8 3.5 4.2 4.9 5.6 6.3 7.0	### Channe Channe	### Channel Incision Comparison	Column C	Column	A	Sestimated Channel Incision: 4.0 (m) (height between the composition of the compositi	Sestimated Channel Incision: 4.0 (m) (height between low betwe	A.0 (m) (height between low bank width: A.0 (m) (m) (m) (m) (m) (m) (m) A.0 (m)	Estimated Channel Incision: 4.0 (m) (height between low bank width and water of the property o	Sestimated Channel Incision: 4.0 (m) (height between low bank width and water)	Sestimated Channel Incision: 4.0 (m) (height between low bank width and water)	Sestimated Channel Incision:	Sestimated Channel Incision: 4.0 (m) (height between low bank width and water)	Sestimated Channel Incision:	Date: Date	Date: 10.10.07 Dissolved Communication Communication	Date Date	Company Comp	Date Date	Column C

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07	
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Field Data Sheets For Recreatiuonal Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10.10.0	7 4:00pm		Site Location Description (e.g. road crossing):						
Personnel:	Larissa	Brown and Gilisa G	ould	Sexton rd c	rossing					
Current Weath	ner Cond	ditions: clear		Facility Nar	me:	whispering pi	ispering pines MHP			
Weather cond	itions fo	r the past 10 days:0	.96 inches	Permit Nun	nber:	MO0118991				
Drought condi	tions?: N	No drought ☑ ; Pha	se I □ ; Phase	II □ ; Phas	e III □ ; Pł	nase IV □ ; Ur	nknown 🗆			
Site Location										
		(Universal Transver	se Mercator Pi	rojection, In	Meters					
Site 01	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:			
		0342061		4362429			12.8 meters			
Site 11	Easting	(UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy:			
		0341877		4362290			10.05 meters			
Photos:	T		T	1		T	Γ			
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose			
58	downst	ream, T1	59	upstream,	Τ1	60	downstream, T11			
Photo ID#	P	hoto Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose			
61	upstrea	m, <u>T11</u>								
Photo ID#	P	hoto Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose			
Uses Observ	ed:									
☐ Swimming		☐ Skin diving	☐ SCUBA di	iving	☐ Tubing	g	☐ Water Skiing			
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadir	ng	☐ Rafting			
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:			
Describe:		,, ,	<u>. </u>							

WBID#	273
Site #	11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Condition	ons:					
☐ City/County parks	☐ playgrounds	☐ MDC conserva	ation lands	☐ Urban areas	☐ Rural R	esidential
☐ Campgrounds	☐ State parks	□ National Fores	sts	☐ Nature trails	☐ Stairs/w	alkways
☐ Boating accesses	☐ Fence	☐ No tresspass s	sign	☐ Steep Slopes	☑ Other:	
Comments:					hay fields	
Evidence of Human L				C coming Cites		
☐ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sites	☐ Rope sv	
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discha	rge	☐ Fishing Tackle	☐ LIVestor	ck watering
comments/other:						
none Substrate:						
% Cobble	% Gravel	% Sand	% Silt	% Mud/	Clay	% Bedrock
% CODDIE	% Gravei 10	% Sand 80	% SIII 10	70 IVIUU/	Ciay	% Deulock
Aquatic Vegatation:						
Water Characteristics		□ Muslav	□ Chom	:-al 📈	None	□ Othor:
Color:	LI Cleai	ЦСТССТ	□ Glay	ш	•	
Dattam Danasit		□ Calide	□ Eine e	radimente 🗸		
Water Characteristics Odor: Color: Bottom Deposit: Surface Deposit:	Sewage Clear Sludge Oil	☐ Musky ☐Green ☐ Solids ☐ Scum	☐ Chemi ☐ Gray ☐ Fine s ☐ Foam	□ l sediments ☑ l	None Milky None None	☐ Other: ☐ Other: brown ☐ Other: ☐ Other:

WBID # 273 Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Str	eam Mor	nhology	· (Reco	hatelosi br	noole or	other f	Saturas	identified	durina	the curve	that may	, eunnor	t recreations	l uepe)
Additional on	Calli Wioi	priorogy	. (11000	u isolateu	pools of	Other	caluics	lucillilleu	uuiiiig	uie suive	, unat may	Suppoi	LICUICALIONA	ıı uscs)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
Comments: (Please re	cord any additional comments h	nere)			
ormonio (nodo no	sord any additional comments i	1010.7			
	none				
Please verify that yo complete.	ou have completed all se	ections, checke	ed all applicable	boxes, and that the f	orm is
urveyor's Signature:	gilisa gould		_Date of Survey:	10.10.07	
Organization:				field team leader	

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

																		Disso	lved Ox	tygen		
	Waterbo	ody ID:	273			Site #:	11									Date:	10.10.07			Time:	4:00	
	Estimate	ed Chann	nel Incisi	on:	4.0	4.0 (m) (height between low bank width and water)										Di	ssolved (Oxygen:	11.9		(mg/L)	
		cation - I UTM X	•	UTM X) 0342061		•		izontal Ac	-		,		OM) 12.8	(meters)		Dissolved Oxygen:					(% sat)	
		UTM X		0342001							•	+/-		(meters)	i	Di		'			.` ′	
	Average	Stream	Width:				9	(meters)	L	ength of	Survey S	Segment:		180	(meters)		Specifi	c Cond:			(µS/cm)	
	(To dete	rmne Le	ngth of I	Reach)					(2	20x avera	ge strear	n width)				Wa	ter Temp	erature:	22.7		(°C)	
	Fiel	d Staff:	Lariss	a Brown		and	Gilisa G	ould						-								
										Tra	nsect C	ross-Se	ction									
	0	1	0	2	0	13		04	()5	O	6		07	08	3	0	9	1	0	11	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.9	0.10	0.7	0.05	0.9	0.10	0.5	0.10	0.7	0.10	0.8	0.05	0.7	0.05	0.7	0.10	0.7	0.20	0.5	0.10	0.5	0.15
2	1.8	0.20	1.4	0.01	1.8	0.20	1.0	0.30	1.4	0.50	1.6	0.20	1.4	0.20	1.4	0.25	1.4	0.65	1.0	0.30	1.0	0.40
3	2.7	0.20	2.1	0.10	2.7	0.30	1.5	0.30	2.1	0.40	2.4	0.25	2.1	0.45	2.1	0.35	2.1	0.55	1.5	0.50	1.5	0.35
4	3.6	0.30	2.8	0.00	3.6	0.45	2.0	0.40	2.8	0.40	3.2	0.30	2.8	0.55	2.8	0.30	2.8	0.55	2.0	0.40	2.0	0.25
5	4.5	0.30	3.5	0.05	4.5	0.50	2.5	0.25	3.5	0.35	4.0	0.40	3.5	0.60	3.5	0.40	3.5	0.50	2.5	0.30	2.5	0.20
6	5.4	0.30	4.2	0.25	5.4	0.35	3.0	0.20	4.2	0.30	4.8	0.50	4.2	0.65	4.2	0.45	4.2	0.45	3.0	0.20	3.0	0.15
7	6.3	0.30	4.9	0.20	6.3	0.40	3.5	0.15	4.9	0.35	5.6	0.30	4.9	0.50	4.9	0.40	4.9	0.30	3.5	0.15	3.5	0.05
8	7.2	0.25	5.6	0.10	7.2	0.30	4.0	0.05	5.6	0.20	6.4	0.10	5.6	0.25	5.6	0.30	5.6	0.20	4.0	0.10	4.0	0.01
9	8.1	0.05	6.3	0.01	8.1	0.10	4.5	0.01	6.3	0.10	7.2	0.10	6.3	0.05	6.3	0.10	6.3	0.05	4.5	0.05	4.5	0.01
Right Bank	9.0	0.00	7.0	0.00	9.0	0.00	5.0	0.00	7.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	5.0	0.00	5.0	0.00
Feature Type	рс	ool	no	ool	no	ool	n	ool	n	ool	n(ool	n	ool	poo	าไ	ро	ol	ро	ool	po	ol
inic, run, or poor	ρc	701	ρC	701	ρ¢	701	L P	001	P	JO1	ρt	701	Р	001	pot	J1	ρυ	O1	ρυ	O1	ро	01

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07	
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WBID#	273
Site #	12

Field Data Sheets For Recreatiuonal Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10.10.0	7 5:00pm		Site Location Description (e.g. road crossing):						
Personnel:	Larissa	Brown and Gilisa (Gould	In between site 11 and 13						
Current Weatl	ner Cond	ditions: clear		Facility Na	Facility Name: whispering pines MHP					
Weather cond	litions fo	r the past 10 days:0).96 inches	Permit Nun	nber:	MO0118991				
Drought cond	itions?: N	No drought ☑ ; Pha	ıse I □ ; Phase	II □ ; Phas	e III □ ; Pl	nase IV □ ; Ur	nknown 🗆			
Site Location	1.									
		(Universal Transve	rse Mercator P	rojection, In	Meters					
Site 01	Easting	(UTM X):	Northing (UTI	И Y):		Horizontal Ac	curacy:			
		0341107		4360696			8.23 meters			
Site 11	Easting	(UTM X):	Northing (UTI	И Y):		Horizontal Ac	curacy:			
		·	3 (*	•						
	0341189 4360773 6.4 meters									
Photos:			_							
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose			
62	downst	ream, T1	63	upstream,	T1	64	upstream, T11			
Photo ID#	Р	hoto Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose			
65	downst	ream, T11								
Photo ID#	Р	hoto Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose			
	•		•			•				
Uses Observ	ed·									
☐ Swimming		☐ Skin diving	☐ SCUBA d	ivina	☐ Tubing	<u> </u>	☐ Water Skiing			
☐ Wind surfi		☐ Kayaking	☐ Boating	9	□ Wadir		☐ Rafting			
☐ Hunting	9					of the above	☐ Other:			
Describe:		☐ Trapping	☐ Fishing		M None	or the above	□ Other.			

WBID#	273
Site #	12

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditi	ions:					
☐ City/County parks	☐ playgrounds	☐ MDC conserver	/ation lands	☐ Urban are		al Residential
☐ Campgrounds	☐ State parks	□ National Fore	ests	☐ Nature tra		rs/walkways
☐ Boating accesses	☑ Fence	✓ No tresspass	sign	☐ Steep Slo	pes □ Oth	ier:
Comments:						
none						
Evidence of Human	Hoo					
		□ Dook/plotform		Compine	Citae □ Den	s swings
☐ Roads ☐ RV/ATV Tracks	☐ Foot path/prints	□ Dock/platform□ NPDES Disch		☐ Camping		e swings stock watering
	☐ Fire pit/ring	☐ NPDE2 DISCI	arge	☐ Fishing Ta	ackie Live	Stock watering
comments/other:						
none						
HOHE						
<u> </u>						
Substrate:						
% Cobble	% Gravel	% Sand	% Silt	%	Mud/Clay	% Bedrock
		20	40		40	
Aquatic Vegatation:						
none						
Water Characteristic						
Odor:	☐ Sewage	☐ Musky	☐ Chem	ical	✓ None	☐ Other:
Color:	☐ Clear	□Green	☐ Gray		☑ Milky	☑ Other:
						brown
Bottom Deposit:	☐ Sludge	☐ Solids		sediments	✓ None	☐ Other:
Surface Deposit:	□ Oil	☐ Scum	☐ Foam		⊠None	☐ Other:

WBID # 273 Site # 12

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Mo	rphology:	(Record isolated pools or	other features identified during	g the survey that may	support recreational uses)

Channel Feature	Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (m)				
			ı	l	
omments: (Please red	cord any additional comments	here.)			
	none				
lease verify that yo	u have completed all s	ections, checke	d all applicable	boxes, and that the	form is
omplete.	piotos an o	, -.			
•					
urveyor's Signature:	gilisa gould		_Date of Survey:	10.10.07	
One ! #!	OEO 1		D :4: -	field to our leads	
Organization:	SES, Inc.		Position:	field team leader	

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

																		Disso	lved Ox	ygen				
	Waterbo	ody ID:	273			Site #:	12									Date:	10.10.07	7		Time:	5:00pm			
	Estimate	ed Chann	nel Incisi	on:	3.0	(m) (hei	ght betw	een low b	ank wid	th and wa	nter)					Di	ssolved	Oxygen:	6.8		(mg/L)			
	01	UTM X	:	0341107	7	. 1	UTM Y:		436069	6		+/-	8.23	(meters)		Dissolved Oxygen:(% sat)								
	11	UTM X: 0341189 UTM Y: 4360073 +/- 6.4 (meters)							-		Specifi	ic Cond:			(μS/cm)									
		Average Stream Width: 8 (meters) Length of Survey Segment: 160 (meters) (To determine Length of Reach) (20x average stream width)								(meters)	Wa	ter Temr	erature:	25.4		(°C)								
				ŕ		and	Gilisa G	ould			<i>G</i>	,		_				•			. (- /			
	Field Staff: Larissa Brown and Gilisa Gould Transect Cross-Section																							
	01 02 03 04				04				07	0	08 09		9	10		11								
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)		
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1	0.9	0.10	0.8	0.30	0.8	0.40	0.7	0.05	0.7	0.05	0.7	0.05	0.7	0.05	0.7	0.20	0.8	0.20	1.0	0.40	1.0	0.20		
2	1.8	0.80	1.6	0.95	1.6	0.40	1.4	0.35	1.4	0.20	1.4	0.30	1.4	0.25	1.4	0.35	1.6	0.60	2.0	0.75	2.0	0.50		
3	2.7	1.00	2.4			0.60		0.45						0.35			2.4	0.80	3.0	0.70	3.0	0.55		
4	3.6		3.2			0.80					2.8						3.2	0.75	4.0	0.80	4.0	0.60		
5	4.5 5.4	1.00	4.0					0.80			3.5 4.2			0.40			4.0		5.0 6.0	0.85	6.0	1.00		
7	6.3	1.00	5.6						4.2		4.2						5.6		7.0	1.00	7.0			
8	7.2	1.00	6.4			0.60											6.4	0.30	8.0	0.95	8.0			
9	8.1	0.80	7.2	0.40	7.2	0.40	6.3	0.15	6.3	0.10	6.3	0.05	6.3	0.20	6.3	0.20	7.2	0.10	9.0	0.75	9.0	1.00		
aight Bank	9.0	0.00	8.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	8.0	0.00	10.0	0.00	10.0	0.00		
eature Type	no	ool	nc	ool	nc	nol	n	ool	n/	ool	n/	ool	n	ool	ро	വ	рс	ol	po	ol	po	ol		
iiic, iuii, or pool	n, or pool pool pool		,01	P'	001	μ	JU1	ρt	7.01	Р	001	ρυ	O1	ρC	· U1	ρυ	O1	ρυ	O1					

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07	
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WBID#	273
Site #	13

Field Data Sheets For Recreatiuonal Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10.10.0	07 6:00pm		Site Location	on Descript	tion (e.g. road	crossing):						
Personnel:	Larissa	Brown and Gilisa G	ould	45 Rd cross	sing								
Current Weatl	ner Cond	ditions: clear		Facility Nar	Facility Name: whispering pines MHP								
Weather cond	itions fo	r the past 10 days:0	.96 inches	Permit Num	nber:	MO0118991							
Drought cond	itions?: N	No drought ☑ ; Pha	se I □ ; Phase	·II □ ; Phas	e <mark>III □ ; P</mark>	nase IV □ ; Ur	nknown 🗆						
Site Location: Location Coordinates (Universal Transverse Mercator Projection, In Meters													
		(Universal Transver	se Mercator Pr	rojection, In	Meters								
Site 01	Easting	ı (UTM X):	Northing (UTN	М Y):		Horizontal Ac	curacy:						
		0339396	<u> </u>	4360779			3.66 meters						
Site 11	Easting	g (UTM X):	Northing (UTN	M Y):		Horizontal Ac	ccuracy:						
		0339134		4360792		7.9 meters							
	<u> </u>												
Photos:			т	 		ı	T						
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose						
66	upstrea	ım, T1	67	downstrear	n, T1	68	downstream, T11						
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose						
69	upstrea	am, T11											
Photo ID#	P	Photo Purpose	Photo ID#	Photo P	Purpose	Photo ID#	Photo Purpose						
Uses Observ	ed:												
☐ Swimming	J	☐ Skin diving	☐ SCUBA di	iving	☐ Tubing]	☐ Water Skiing						
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadin	g	□ Rafting						
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:						
Describe:			•		•								

WBID#	273
Site #	13

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditi	ons:					
☐ City/County parks	☐ playgrounds	☐ MDC cons	ervation lands			☑ Rural Residential
☐ Campgrounds	☐ State parks	□ National F	orests	☐ Nature tra	ails [□ Stairs/walkways
□ Boating accesses	☑ Fence	□ No tresspa	ıss sign	☐ Steep Slo	opes [☐ Other:
Comments:						
none						
Evidence of Human	l laa.					
	-			Compina	Citoo	Deno ouringo
☐ Roads ☐ RV/ATV Tracks	☐ Foot path/prints	□ Dock/platfo□ NPDES Dis		☐ Camping		☐ Rope swings ☐ Livestock watering
	☐ Fire pit/ring	וח אבחבט חוי	scnarge	☐ Fishing T	аскіе п	_ Livestock watering
comments/other:						
none						
none						
Substrate:						
% Cobble	% Gravel	% Sand	% Silt	%	Mud/Cl	ay % Bedrock
			50		50	,
Aquatic Vegatation:						
none						
Water Characteristic						
Odor:	☐ Sewage	☐ Musky	☐ Chem	nical	☑No	
Color:	☐ Clear	□Green	☐ Gray		□ Mi	•
						brown
Bottom Deposit:	□ Sludge	☐ Solids		sediments	☑ No	
Surface Deposit:	□ Oil	☐ Scum	☐ Foam		⊠No	ne 🗆 Other:

WBID # 273 Site # 13

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational

Channel Feature	Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (m)				
Comments: (Diagon ro	cord any additional comments l	aoro l			
Comments. (Please re	cord any additional comments i	iere.)			
	none				
Please verify that yo complete.	ou have completed all s	ections, checke	ed all applicable	boxes, and that the f	orm is
Surveyor's Signature:	gilisa gould		_Date of Survey:	10.10.07	
Organization:	SES, Inc.		Position:	field team leader	

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

																		Disso	lved Ox	ygen			
	Waterbo	ody ID:	273			Site #:	13									Date:	10.10.07	1		Time:	6:00pm		
	Estimate	ed Chanr	nel Incisi	on:	4.0	(m) (hei	ght betw	een low b	ank widt	th and wa	ater)					Di	(mg/L)						
								izontal Ac	•		(EPE / P	DOP / FO		(,)									
			JTM X: 0339396 UTM Y: 4360779 +/- 3.66 (meters) JTM X: 0339134 UTM Y: 4360792 +/- 7.9 (meters)								•	Di	ssolved	Oxygen:			(% sat)						
	Average Stream Width: 9 (meters) Length of Survey Segment: 180 (meters									(meters)		Specifi	c Cond:			(μS/cm)							
	_		ngth of I					(20x avera	•	-			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Wa	ter Temp	erature:	23.1		(°C)		
	Fiel	ld Staff:	Lariss	a Brown		and	Gilisa G	ould															
	Transect Cross-Section																						
	01 02 03			3		04 05				06		07 0		09		9	1	0	1	1			
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.8	0.05	1.4	0.85	1.1	0.85	1.0	0.40	1.0	0.45	1.1	0.45	0.8	0.05	0.9	0.20	1.0	0.10	0.9	0.20	0.7	0.01	
2	1.6	0.10	2.8	0.90	2.2		2.0	0.20						0.35	1.8	0.60		0.40	1.8	0.30	1.4	0.20	
3	2.4							0.00						0.55	2.7				2.7	0.35		0.40	
4	3.2							0.30						0.70					3.6			0.50	
5	4.0				5.5 6.6				6.0						4.5 5.4				4.5 5.4			0.40	
7	5.6		9.8		7.7										6.3				6.3			0.40	
8	6.4						8.0							0.40	7.2					0.20		0.40	
9	7.2		12.6		9.9			0.05					7.2	0.20	8.1				8.1	0.15	6.3	0.40	
ight Bank	8.0	0.00	14.0	0.00	11.0	0.00	10.0	0.00	10.0	0.00	11.0	0.00	8.0	0.00	9.0	0.00	10.0	0.00	9.0	0.00	7.0	0.00	
eature Type	:0	er o		vo1		. o.1	د ال	eri.		xa1		vo1		a a l	- a-	o.1	- مد	1	, .		al.		
ffle, run, or pool	ı, or pool riffle pool		pc	101	rii	ffle	po	ool	po	ool	р	ool	po	OI	po	100	po	ol	po	UI			

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07	
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Site# 1 Photo ID# 18, Downstream T-1



Site# 1 Photo ID# 20, Downstream T-11



Site# 1 Photo ID# 19, Upstream T-1



Site# 1 Photo ID# 21, Upstream T-11



Site# 2 Photo ID# 22, Upstream



Site# 2 Photo ID# 24, Downstream



Site# 2 Photo ID# 23, Downstream



Site# 2 Photo ID# 25, Upstream



Site# 3 Photo ID# 38, Upstream



Site# 3 Photo ID# 40, Downstream



Site# 3 Photo ID# 39, Downstream



Site# 3 Photo ID# 41, Upstream



Site# 4 Photo ID# 26, Downstream T-1



Site# 4 Photo ID# 28, Downstream T-11



Site# 4 Photo ID# 27, Upstream T-1



Site# 4 Photo ID# 29, Upstream T-11



Site# 5 Photo ID# 30, Downstream



Site# 5 Photo ID# 32, Downstream



Site# 5 Photo ID# 31, Upstream



Site# 5 Photo ID# 33, Upstream



Site# 6 Photo ID# 34, Downstream T-1



Site# 6 Photo ID# 36, Downstream T-11



Site# 6 Photo ID# 35, Upstream T-1



Site# 6 Photo ID# 37, Upstream T-11



Site# 7 Photo ID# 42, Downstream T-1



Site# 7 Photo ID# 44, Downstream T-11



Site# 7 Photo ID# 43, Upstream T-1



Site# 7 Photo ID# 45, Upstream T-11



Site# 8 Photo ID# 46, Downstream T-1



Site# 8 Photo ID# 48, Downstream T-11



Site# 8 Photo ID# 47, Upstream T-1



Site# 8 Photo ID# 49, Upstream T-11



Site# 9 Photo ID# 50, Downstream T-1



Site# 9 Photo ID# 52, Downstream T-11



Site# 9 Photo ID# 51, Upstream T-1



Site# 9 Photo ID# 53, Upstream T-11



Site# 10 Photo ID# 54, Upstream T-11



Site# 10 Photo ID# 56, Downstream T-1



Site# 10 Photo ID# 55, Downstream T-11



Site# 10 Photo ID# 57, Upstream T-1



Site# 11 Photo ID# 58, Downstream T-1



Site# 11 Photo ID# 60, Downstream T-11



Site# 11 Photo ID# 59, Upstream T-1



Site# 11 Photo ID# 61, Upstream T-11



Site# 12 Photo ID# 62, Downstream T-1



Site# 12 Photo ID# 64, Downstream T-11



Site# 12 Photo ID# 63, Upstream T-1



Site# 12 Photo ID# 65, Upstream T-11